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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,837	08/08/2006	Hitoshi Asahi	52433/859	4507

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EXAMINER	
VELASQUEZ, VANESSA T	
ART UNIT	PAPER NUMBER
1793	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/588,837	ASAHI ET AL.	
	Examiner	Art Unit	
	Vanessa Velasquez	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 May 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 August 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

Claims 1-6 and 13-17 are canceled. Currently, claims 7-12 are pending and presented for examination on the merits.

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kashima et al. (JP 10-176239, English abstract and machine translation) in view of Bates et al. ("Quenching of Steel," Vol. 4, ASM Handbooks Online).

Regarding claim 7, Kashima et al. teach a steel sheet (plate) comprising a two-phase microstructure of martensite and ferrite (abstract). The martensitic phase (maximum 20%) is embedded in the main ferritic phase (the balance) (para. [0024]), and the size of the martensitic grains is on the order of microns (para. [0025]), making the martensite relatively fine in size. The small decrease in the yield strength of the steel after formation into a tube (pipe) signifies a reduced Bauschinger effect (para. [0005], [0024]). The steel sheet of Kashima et al. is to be utilized for manufacturing tubes (pipes) (abstract, para. [0006]).

Further regarding claim 7, Kashima et al. do not explicitly teach that the martensitic grains reside at the ferrite grain boundaries. However, it has been well established that "[w]here the claimed and prior art products are identical or are substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established" (MPEP § 2112.01). Additionally, it follows that if identical or substantially identical products are manufactured in an identical or substantially identical method, then both products would be expected to inherently possess the same properties. In the present case, the steel sheet of the prior art has an overlapping microstructure type (as described in the preceding paragraph), a substantially similar chemical composition (see subsequent paragraphs discussing claims 10 and 11), and is manufactured by a method substantially similar to that disclosed in the specification of the present application. The present application states that the steel plate is hot rolled at 1200°C, finished at 850°C, water cooled, and coiled at 600°C (page 18, lines 11-20). This may be compared to the similar method of Kashima et al., where it is taught that the steel sheet is hot-rolled at 1000-1300°C, finished at 750-950°C, cooled at a cooling rate of 10-50°C/s, and coiled at 480-600°C (abstract; para. [0027]-[0030]). Kashima et al. does not specify the type of quenching medium used to obtain the cooling rate; however, as demonstrated by Bates et al., it is well known to one of ordinary skill in the art that water is a convenient and pollution-free means to quench steel and that it is capable of creating cooling rates within the range taught by Kashima et al. (Bates et al., page 1-5 of 49, Fig. 42(b), Fig. 43). Therefore,

one of ordinary skill in the art would expect the martensitic grains to lie at the grain boundary of the ferrite grains in the prior art since the chemical composition, type of microstructure, and manufacturing techniques are substantially the same in Kashima et al. as they are with the claimed invention.

With regard to the heating and quenching steps appended to the claim, the steps render the claim a product-by-process claim. It is noted that

> "even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." (underlining added)
>
> *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted) (also see MPEP § 2113)

Absent evidence demonstrating that the claimed product is actually different from that of the prior art, the process steps in the product claim will not be accorded patentable weight.

Regarding claim 8, the martensitic grains have an average size of 10 microns or less (para. [0025]) and are present in amount of 1-20 area % (para. [0024]), which overlap the claimed range. The overlap between the range taught by the prior art and the claimed range creates a *prima facie* case of obviousness (MPEP § 2144.05).

Regarding claim 10, Kashima et al. teach that the steel sheet comprises the following elements, in percent by weight (abstract):

Element	Claims 4 and 10	Kashima et al.
C	0.03 - 0.30	0.02 - 0.12

Si	0.01 - 0.8	0.1 - 1.5
Mn	0.3 - 2.5	0 - 2.0
P	0 - 0.03	0 - 0.05
S	0 - 0.01	0 - 0.01
Al	0.001 - 0.1	0.01 - 0.10
N	0 - 0.01	Not taught
Fe & impurities	balance	balance

The overlap between the ranges taught by the prior art and the claimed ranges creates a *prima facie* case of obviousness because both the prior art and the claims are drawn to steel sheets for use in pipes exhibiting a minimized Bauschinger effect (MPEP § 2144.05).

With regard to the nitrogen content, Kashima et al. do not teach the presence of nitrogen; therefore, nitrogen will be regarded as being absent (i.e., zero percent by weight) in the steel sheet. Zero percent lies within the claimed range and thus still reads on the claimed invention.

Regarding claim 11, Kashima et al. teach that the steel sheet may optionally further contain the following elements, in percent by weight (abstract, para. [0009]):

Element	Claims 5 and 11	Kashima et al.
Nb	0 - 0.1	0 - 0.08
V	0 - 0.3	0 - 0.08
Mo	0 - 0.5	0.1 - 1.5 (Mo+Cr)
Ti	0 - 0.1	0 - 0.08
Cr	0 - 1.0	0.1 - 1.5 (Mo+Cr)
Ni	0 - 1.0	0 - 1.0
Cu	0 - 1.0	0 - 1.0
B	0 - 0.003	Not taught
Ca	0 - 0.004	0 - 0.005

With regard to the boron content, Kashima et al. do not teach the presence of boron; therefore, boron will be regarded as being absent (i.e., zero percent by weight) in the

steel sheet. Zero percent lies within the claimed range and thus still reads on the claimed invention.

Regarding claims 9 and 12, Kashima et al. do not expressly teach that ratio of the proportional limit of the compression stress-strain curve in the circumferential direction before and after expansion of the steel pipe is 0.7 or more. Kashima et al. also do not expressly teach that the Charpy V-notch value in the transverse direction at -20°C is at least 40 J. However, these properties would be expected to be inherent to the alloy of the prior art for the same reasons described in pages 3 and 4 of this Office action (i.e., substantially identical materials are manufactured by substantially similar methods and would therefore be expected to possess the same properties).

Response to Arguments

3. Applicant's arguments filed May 18, 2009 have been fully considered but they are not persuasive.

Applicant argues that Kashima et al. do not teach heating and quenching steps after the pipe is formed and that these steps would result in a different microstructure. In response, the claim is directed to a product, not a process. As stated in MPEP § 2113,

> "even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." (underlining added)

> *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted)

In the present instance, the product limitations have been taught by the prior art (see paragraph 2 of this Office action). Therefore, burden shifts to Applicant to show that the product of the prior is actually different from that of the product-by-process claimed invention (MPEP § 2113).

Applicant asserts that the high heating temperature (1000-1300°C) of Kashima et al. would result in ferrite residing at the grain boundaries of the martensite, not vice versa as claimed. Applicant further asserts that the cooling of Kashima et al. would result in the formation of cementite, which would negatively influence a reduced Bauschinger effect. In response to both assertions, Applicant has not provided objective evidence of the asserted phenomenon. Pure remarks cannot replace actual proof where proof is needed (MPEP § 716.01(c)(I)-(II)). It is noted that even if the grain boundary phenomenon described by Applicant were to occur in the alloy of Kashima et al., a configuration of ferrite dispersed at martensitic grain boundaries is essentially the same configuration as martensite residing at ferrite grain boundaries because both phases share and lie at each other's grain boundary. Therefore, the prior art would still read on the claimed invention.

Conclusion

4. No claims are allowable. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE**

FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vanessa Velasquez whose telephone number is 571-270-3587. The examiner can normally be reached on Monday-Friday 9:00 AM-6:00 PM ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached at 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art Unit 1793

/Vanessa Velasquez/
Examiner, Art Unit 1793